

THE TREES AT THE AUSTIN CITY CEMETERIES

A Report To The Urban Forestry Board
by
Nick Classen, Member, Urban Forestry Board
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This report is divided into two parts: Part I -- Observations of the Condition of the Cemetery Trees, and Part II. -- Comments on the Contract.

Part I reports the results of an inspection made on January 17, 2012, by Nick Classen, Zoila Vega-Marchena, Ph.D., and Michael Fossum; and comments on the condition of the trees at the five city-owned cemeteries (Plummers, Evergreen, Oakwood, Oakwood Annex, and Austin Memorial Park - AMP) and whether or not they appeared to have been watered in accordance with the watering plan, including trees selected for watering, that was developed by the City's Parks And Recreation Department (PARC) and agreed to by the contract operator, InterCare Corporation. In fact, most of the watering at AMP was done by citizens during Fall 2011 and January 2012. The watering plan did not include Plummers Cemetery. It is curious that there was a significant difference in the total number of trees that were reported marked for watering (130) and the number actually marked with pink ribbons for watering (92).

Part II contains opinions, observations, facts, and recommendations about the contract between the City of Austin (COA) and the city's cemetery operations contractor, InterCare Corporation. Contributions to this part of the report came from Sharon Blythe, Zoila Vega-Marchena, Ph.D., Michael Fossum, Dale Flatt, and Nick Classen.

PART I

Plummers Cemetery

Looked all right, but dead wood pruning is needed. Most of the trees had no leaves, so it will be necessary to wait until Spring when the leaves appear to determine how many of these trees are dead. When this cemetery was inspected in July, 2011, by Zoila and Michael, it looked all right. This cemetery, which is not very active (no recent burials), was not included in the watering plan. There is no irrigation system on site, and it would be best not to water this cemetery because water trucks would cause significant soil compaction.

Evergreen Cemetery

One of the trees selected for watering (burr oak) looked distressed or dead. Three trees that are dead have not been removed. It was not possible to determine that the trees selected for watering were, in fact, watered or that they had received a sufficient amount of water because there were no leaves; making it difficult to judge if there was additional

canopy loss. In addition, the frequent rains (since October) have helped, and the health of the trees may have improved because of the rain and not specifically because of supplemental watering.

More trees need to be watered, especially those heritage trees that are impacted by additional stressors such as roads. Several heritage trees near roadways need to be watered. Zoila and Michael reported in July 2001 (to the 311 operator) that these heritage trees near the road needed water because they appeared very stressed from lack of water, with leaves that were turning gray and brown and had dropping branches. However, these trees were not marked with pink ribbons and were not watered.

Evergreen has a large section where the only trees are crepe myrtles, which were planted by the edge of the road to facilitate maintenance. Large and long lived trees should be planted throughout the cemeteries, in spite of the increased maintenance, to increase the urban canopy and increase carbon sequestration, clean the air, reduce stormwater runoff, and shade the area. The absence of large heritage trees in a significant section of Evergreen makes it more important to preserve the heritage trees that Evergreen has. More of these heritage trees need to be watered.

Oakwood Annex Cemetery

Similar to Evergreen, it is difficult to judge the condition of the trees due to the lack of leaves. In addition, the rains since October helped, and the marked trees may have responded to the rains rather than to any supplemental watering. Oakwood Annex is in critical condition. Many dead trees were observed, and more heritage trees need to be watered to stop this unfortunate trend. Oakwood Annex is in particularly bad shape because of the fewer family members that visit and help with the watering.

Oakwood Annex is in a state of abandon. There is water supplied to this location, but the irrigation system on site is old and deteriorated. Some irrigation heads are missing and some are broken, but many heads appear operable. There is no reason for the large heritage trees at this location to continue to die with water on site.

Oakwood Cemetery

Similar to the Annex, Oakwood is also in a state of abandon and critical condition. There are large areas where most trees have died and only stumps remain. One of the areas is by the chapel. The areas adjacent to the chapel have a few remaining heritage trees that need to be watered, but were not selected for watering. Without supplemental watering, these last heritage trees in these decimated areas will certainly suffer the same fate as their predecessors.

A question that the UFB needs to ask is: Why were 75 trees (in Oakwood and Oakwood Annex combined) selected for watering, but only 38 were watered?

Numerous dead trees were observed, and many elegant tombstones and grave markers are out of alignment and are leaning significantly – this, a place of historical significance! A very large tree in front of the Zilker tomb years ago, the base of which at ground level

was some 4 feet in diameter, died, was cut down, and was never replaced (Andrew Jackson Zilker, the man who gave 40+ acres to the City to create Zilker Park and donated Barton Springs to the community). This should make us all wonder and question why the final resting place of so much of Austin's history is being so woefully neglected by those responsible for maintaining its beauty and forestry.

Austin Memorial Park Cemetery (AMP)

This cemetery looks better than the two Oakwood cemeteries due to the intensive watering by citizens from Spring 2011 to the present. We only observed a few of the live oaks selected for watering. These live oaks picked for watering looked all right, but it could be that these trees responded to the rains rather than supplemental watering. Not a lot of difference could be seen between those live oaks selected for watering and those nearby that were not marked for watering, so it may be that none of the trees received enough supplemental water, or that they were all watered by citizens. Drought impacts trees slowly, and damage is often not observed until the following year. It will be necessary to wait until Spring when the leaves come back to determine the condition of the trees as well as other trees that need care.

More heritage trees need to be watered. Many trees were stressed last summer and needed water, but were not selected for watering. Many of the trees at this location and other cemeteries could use mulch or compost (compost will help roots grow, and more roots will help the trees survive the drought).

CONCLUSIONS

1. More trees need to be watered through June, and longer depending on the drought. Watering trees during Fall and Spring will help roots grow, which will prepare the trees to survive the heat and drought of summer.
 - a. Small trees planted within the last 3 years need 10 minutes per week; citizen watering at AMP helped 15 citizen-planted trees last year.
 - b. Established trees need slow watering – 90 to 120 minutes every 3 to 4 weeks, depending on temperature and if there is no rain in the 3 to 4 week period between waterings.
2. In four of the cemeteries, more trees can be watered according to COA water conservation guidelines by InterCare (by hand and by irrigation systems) even if only a few hours per week. InterCare can water with a combination of soaker hoses, irrigation systems, and by hand, depending on the area. InterCare needs to dedicate staff on site to water 5 days per week – by hand, if necessary. If more is needed, arrangements can be made to water overnight.
3. The AMP irrigation system is in relatively good condition, and watering is easier there than at Oakwood, Oakwood Annex, and Evergreen where the job is more difficult and uncertain because of the condition of the irrigation systems and lack

of citizen involvement. In any event, if the trees are not watered this summer, they may die because of drought conditions.

4. Pruning and other tree care needs to be done by a certified arborist; at the present time, this is not being done or supervised by a certified arborist. The alternative is to give this responsibility to the PARD Forestry program along with proper funding. The trees need mulching and other care on a yearly or semi-annual basis by a certified arborist.

Questions that the Urban Forestry Board (UFB) needs to ask are:

1. How are the trees being watered? In other words, by a single soaker hose or one arranged in a spiral pattern on the outer half of the drip line?
2. How long at a time were the trees watered, how often were they watered, and for what duration (Oct. – Nov., Oct. – Dec.) were they watered?

PART II

FINDINGS

From talking to and hearing from a number of cemetery activists, tree care professionals, other city board members, and private citizens; and from my own reading and studying of the present contract, it is my observation and opinion that the original contract was poorly negotiated and is being poorly managed. The contract is “broken” by a number of adjustments to the original contractual provisions during the contract period such as (1) the COA reimbursing the contractor for, or paying for, all water billed over \$50,000 per year, (2) payment for other expenses not originally part of the negotiated contract, and (3) the “Retained Revenue Estimate (RRE)” that in effect guarantees the contractor a profit by paying him for his expenses that run over the budgeted amount each year. It is the unanimous consensus that this is a blatant case of mismanagement by InterCare and a lack of oversight by PARD that allows the mismanagement to continue.

The money is there to water and otherwise care for the cemetery trees, and in reality, the sale of cemetery lots at AMP and a few at Evergreen pay for InterCare’s contract. However, the contractor is not performing; and while the several UFB letters that have been written and sent to our City Council have made a difference and have brought about the formulation of a “watering plan,” there is no one available from PARD to supervise the work. The PARD cemetery contract administrator has not been successful at doing this, and it appears that the present administration and supervision of the contract work items is geared towards maintaining an amicable relationship with the contractor (the status quo) rather than holding the contractor responsible for effective performance based on recognized and customary industry standards.

The contractor (InterCare) is supposed to prune the trees at the cemeteries (under certain circumstances such as to remove safety hazards, remove dead wood, and maintain

required clearances), but he is not qualified to do so because there is no qualified and certified arborist on his staff. City ordinance requires that a certified arborist write the pruning plan and be present during the pruning of public trees.

The draft restated contract, currently being considered:

1. Apparently gives more money to the contractor, but does not add much more tree care;
2. Does not include an enforcement provision to enforce the terms of the contract;
3. Has no provision that outlines the City's responsibilities with regard to operation and maintenance (including that for trees), and this is essential. A contractual agreement between two parties must state that for which each is responsible.
4. Does not completely satisfy the following requests by the City Auditor:
 - a. that the contract be clear on each party's responsibilities, and
 - b. that there be an enforcement process outlined that will hold the contractor accountable.

Even though asserted by PARD that the draft restated contract establishes clear contractual duties, for the City and InterCare, it clearly gives more advantage to InterCare. There may be some clarification of responsibilities, but there are still a number of vague areas; and there is still NO enforcement provision. In addition, the City's responsibilities are not present in either contract – original or restated versions.

5. Does not specify that InterCare will retain a certified arborist to oversee pruning and other tree care needs in spite of this being required by city ordinance.
6. There are three divergent views on how the contract matter should be handled:
 - i. That the 2006 contract be terminated and new bids solicited.
 - ii. That the 2006 contract be retained and made to work as effectively as possible to continue operations until it expires in 2016.
 - iii. A new contract is needed, and the draft restated contract currently being discussed should not be considered or approved. To terminate the current contract now would not allow enough time to write a new and meaningful contract, find suitable contractors, take bids, and negotiate an effective contractual arrangement. To act in haste could result in a document that is flawed because something was left out or misstated, and a list of contractors/bidders being developed that might not have been sufficiently researched to ensure qualified and competent companies.

Several changes as recommended below in tree care and management of the current contract need to be made, and if they cannot be negotiated, the City needs to remove these responsibilities from the contract and assign them to the PARD Forestry Program. Also, then work needs to begin immediately – from scratch – on a new contract for solicitation.

RECOMMENDATIONS

(To be negotiated and included in the 2006 or new contract)

PRUNING AND TREE CARE

1. That there be a provision requiring the contractor to hire and maintain on his staff a certified arborist;
2. That a provision be provided that specifically requires the following:
 - a. all pruning cuts shall be made per ANSI and ISA standards,
 - b. the contractor shall abide by the current COA oak wilt policy,
 - c. a certified arborist shall write the pruning plan and be present during part of the pruning,
 - d. public tree work permits shall be obtained from PARD Forestry prior to working on public trees.
3. That there be a provision for routine care, mulching, composting, and semi-annual inspections performed under the supervision of a certified arborist;
4. That tree maintenance pruning be performed at least twice a year to remove diseased and dead material; to ensure that unsafe conditions are remedied or eliminated, and that canopies are raised and maintained at a height of eight feet above ground, and four feet above roof surfaces where needed for clearances.
5. That the contractor notify the inspector or PARD prior to pruning any public tree to provide the name of the certified arborist performing or supervising the work, the tree location, size and species, and time of the work. An exemption from this requirement can be made for imminent danger situations.
6. That a specific pruning item be added to the PARD inspector's worksheet, to be checked every 2 weeks during unannounced visits, that the contractor maintain a ledger of each pruning event that includes the time of the event, which tree was pruned, tree species and size, name of the certified arborist present, that the tools were disinfected prior to pruning, and that the tree wound was covered (dressed) immediately with an approved sealant to prevent oak wilt.

WATERING

1. With regard to the annual water budget, it is recommended that the COA cease any payments for water; and in addition to the contractor paying for all the water needed for trees, shrubs, grounds, and other uses, that the contractor maintain financial responsibility for all other utilities.
2. That the contractor be required to hand water public trees at any time to supplement watering done under the COA water conservation guidelines;
3. That the contractor water all additional trees at each cemetery that are determined to need water – chosen by a certified arborist from PARD Forestry – in accordance with the Modified Tree Watering Selection criteria.
4. That there be a provision that requires that these trees (mentioned in Number 3. immediately above) receive the amount of water recommended in the attached Watering Graph through June 2012, and longer depending on the drought (the amount of water depends on the tree diameter). Heritage trees need to receive 1 inch of water every 3-4 weeks until June, depending on temperature and humidity, and every 2-3 weeks from July to September, depending on temperature and humidity. The trees will need less water if it rains.
5. That the Public Cemetery Tree Watering Plan developed by PARD Forestry, dated 08/30/11, be modified because the tree selection guidelines in that tree watering plan are too stringent for the current Stage 2 and any stage other than Stage 3. The tree selection guidelines need to be less stringent and include more trees in order to save them and better prepare them for when Stage 3 is reached and all outdoor watering has ceased.

The following modifications to the Public Cemetery Tree Watering Plan are recommended:

- a. All trees should be watered that have not yet shown at least 50% defoliation;
 - b. Instead of watering trees that show signs of stress at 5% leaf discoloration, water all heritage trees that show signs of drought stress (droopy branches and withered leaves). Do not wait until there is 5% leaf discoloration because by then, the tree is already stressed.
6. That a specific watering inspection item be added to the PARD inspector's worksheet during his unannounced visits (to be checked every 2 weeks) that the contractor shall maintain a ledger (or log book) to document the date of each watering event, time of the event, which trees were watered, duration of watering, who watered them, amount of water provided, and method of watering. Inspector shall check this ledger during the visits and confirm the condition of trees by visual inspection. Forestry is to be responsible for training the inspector to make these evaluations and recognize signs of drought stress.

7. That there be a provision requiring irrigation of all cemeteries where irrigations systems exist, as necessary to sustain established and new turf, plants, trees, and shrubs.
8. That there be a provision requiring the contractor to provide regular irrigation in compliance with the COA water conservation program.
9. That there be a provision requiring the contractor to repair and maintain the irrigation systems in good and workable condition for the duration of the contract.
10. That there be a provision that allows the public to hand water individual plots at any time to supplement watering done by the contractor.

GENERAL

1. That there be a provision for the City to develop a reporting and tracking system that works (in effect, the present 311 system does not work; calls and messages are not forwarded to the right person, or not at all).
2. That there be a provision that clearly states the contractor's and the COA responsibilities for tree care and provides for City supervision and enforcement of the contractor's responsibilities;
3. That there be an agreement, provision, or understanding that if these provisions and conditions cannot be negotiated with the contractor, all watering, pruning, and tree care be assigned to the City of Austin PARD Forestry Program along with the related funding.
4. FINALLY, it is recommended that Option 6.i.i.i. be adopted; i.e., the current draft restated contract not be considered, and the recommendations above be adopted. Further, if these recommendations cannot be negotiated and implemented, that the tree care responsibilities and related funding be removed from the contract and given to the City's PARD Forestry Program; and that work – from scratch – on a new contract for solicitation begin immediately.

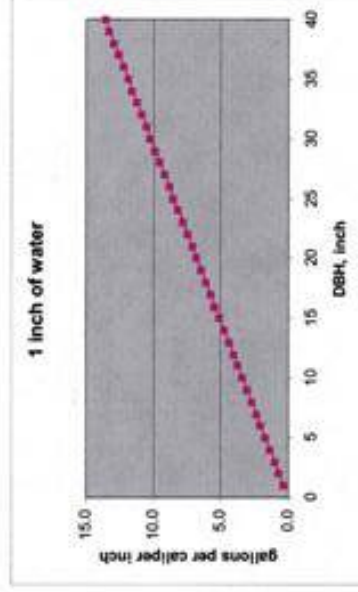
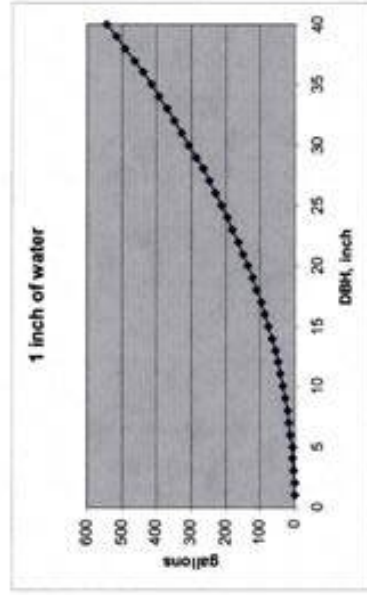
Respectfully submitted,

Nick Classen, Member
Urban Forestry Board

Attachment: Watering Graph (from Dr. K. Fite, Bartlett Research Labs, NC)

How many gallons per caliper inch are needed to provide 1 inch of water?

Based on Dr. K. Fite's calculations, Bartlett Tree Research Labs, NC



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